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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,450	08/05/2003	Naofumi Yamauchi	S004-5084	6710

7590 11/30/2005

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EXAMINER	
NGUYEN, THANH NHAN P	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/634,450	YAMAUCHI ET AL.	
	Examiner	Art Unit	
	(Nancy) Thanh-Nhan P. Nguyen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-23,29 and 30* is/are pending in the application.

4a) Of the above claim(s) *12-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-11,15-23,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to Amendment dated 9/14/2005.

2. Currently, claims 9-11, 15-23 and 29-30 have been elected; claims 12-14 have been non-elected; claims 1-8 & 24-28 have been cancelled.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "light-shielding object" in claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 29 is objected to because of the following informalities: claim 29 currently reads as, "... to enable an observer to view the display information form the first side of the liquid crystal panel;" It should have read as, ""... to enable an observer to view the display information from the first side of the liquid crystal panel;"

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9-11, 15, 17-23 and 29-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Akiyama U.S. Patent No. 6,542,208.

Regarding claim 29, Akiyama discloses a liquid crystal display device for displaying information viewable by an observer form opposite sides of the device using incident light incident from only one of the sides, the liquid crystal display comprising: a liquid crystal panel having two opposing substrates (2 & 3), the liquid crystal panel being driven during use of the liquid crystal display device to change the direction of

polarization of polarized light passing therethrough at selected regions thereof to produce display information; a polarizer (10) disposed over a first side of the liquid crystal panel for polarizing incident light incident thereon; and a reflection-polarizing plate (9) disposed over a second side of the liquid crystal panel opposite the first side for receiving polarized incident light exiting the liquid crystal panel; wherein incident light polarized by the polarizer and transmitted through the liquid crystal panel while undergoing a changed in direction of polarization is reflected by the reflection-polarizing plate back through the liquid crystal panel and the polarizer to enable an observer to view the display information from the first side of the liquid crystal panel; and wherein incident light polarized by the polarizer and transmitted through the liquid crystal panel without undergoing a change in direction of polarization is transmitted through the reflection-polarizing plate to enable an observer to view the display information from the second side of the liquid crystal panel, [see fig. 1 & 5].

Regarding claim 30, Akiyama discloses a liquid crystal display device according to claim 29, wherein the polarization axis of polarized light passing through OFF regions of the liquid crystal layer is set parallel to the reflection axis of the reflection-polarizing plate so that the liquid crystal display device displays positive display information in a total reflection mode when viewed from the first side and displays negative display information in a total transmission mode when viewed from the second side, [see fig. 1].

Regarding claim 9, Akiyama discloses a liquid crystal display device according to claim 29, wherein the reflection-polarizing plate reflects a polarization component of light that is polarized in a specific direction and transmits other polarization components

of the light, and the reflection-polarizing plate has a reflection axis set in the same direction as at least one of (1) a polarization direction of light that exits the liquid crystal panel after a polarization direction of the light has been changed by the liquid crystal layer, [see fig. 1], and (2) a polarization direction of light that exits the liquid crystal panel without having being changed in polarization direction by the liquid crystal layer, [see fig. 4].

Regarding claim 10, Akiyama discloses a liquid crystal display device according to claim 29 further comprising a light-shielding object (11) provided over the reflection-polarizing plate for blocking unwanted light that has entered the liquid crystal panel from reaching the reflection-polarizing plate, [see fig. 1].

Regarding claim 11, Akiyama discloses a liquid crystal display device according to claim 9 further comprising a second polarizer (11) provided over the reflection-polarizing plate and having an absorption axis that is in the same direction as the reflection axis of the reflection-polarizing plate, [see fig. 1].

Regarding claim 15, Akiyama discloses a liquid crystal display device according to claim 29 further comprising a front light unit provided over the polarizer for irradiating the liquid crystal panel with light, [see fig. 1].

Regarding claim 17, Akiyama discloses a liquid crystal display device according to claim 29, wherein the polarizer absorbs a specific linear polarization component and transmits other polarization components, [see fig. 1].

Regarding claim 18, Akiyama discloses a liquid crystal display device according to claim 29, wherein the reflection-polarizing plate reflects a specific linear polarization component and transmits other polarization components, [see fig. 1].

Regarding claim 19, Akiyama discloses a liquid crystal display device according to claim 29, wherein the polarization direction of light that has reached the liquid crystal panel is changed in OFF regions of the liquid crystal layer in accordance with the twist angle of liquid crystal molecules of the liquid crystal layer, [see col. 3, lines 63-64].

Regarding claim 20, Akiyama discloses a liquid crystal display device according to claim 9, wherein incident light that travels through ON regions of the liquid crystal layer maintains the polarization direction of the incident light and exits the liquid crystal panel without a change in polarization direction, and a polarization component of the exit light that matches the reflection axis of the reflection-polarizing plate is reflected by the reflection-polarizing plate, whereas other components of the exit light pass through the reflection-polarizing plate, [see figs. 1, 4].

Regarding claim 21, Akiyama discloses a liquid crystal display device according to claim 20, wherein, if the direction of the polarization axis of incident light that has passed through OFF regions of the liquid crystal layer matches the direction of the reflection axis of the reflection-polarizing plate, the light that has passed through the OFF regions of the liquid crystal layer is reflected by the reflection-polarizing plate and reaches the first side but not the second side, whereas incident light that has passed through the ON regions of the liquid crystal layer is transmitted through the reflection-polarizing plate and reaches the second side, [see fig. 1].

Regarding claim 22, Akiyama discloses a liquid crystal display device according to claim 21, wherein, as viewed from the first side, the OFF regions of the liquid crystal layer produce a bright display and the ON regions of the liquid crystal layer produce a dark display, whereas, as viewed from the second side, the OFF regions of the liquid crystal layer produce a dark display and the ON regions of the liquid crystal layer produce a bright display, [see fig. 1].

Regarding claim 23, Akiyama discloses a liquid crystal display device according to claim 21, wherein the polarization axis of light that has passed through the OFF regions of the liquid crystal layer is set parallel to the reflection axis of the reflection-polarizing plate, so that the liquid crystal display device displays a positive display of a total reflection mode when viewed from the first side and a negative display of a total transmission mode when viewed from the second side, [see fig. 1].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama.

Regarding claim 16, even though Akiyama lacks disclosure of a liquid crystal display device according to claim 29 further comprising a driver circuit for supplying a first set of driving signals to the liquid crystal panel to produce a given display when

viewed from the first side and converting the driving signals to produce the given display when viewed from the second side, it would have been obvious for one ordinary skill in the art first to have a driver circuit for supplying the driving signal to the liquid crystal panel to produce the display when viewed from the fist side, and further to have a converting driving signals in order to produce the same display as viewed from the first side (not up side down images) when viewed from the second side. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have a converting driving signals for the benefit of producing the same display as viewed from the first side (not up side down images) when viewed from the second side.

Response to Arguments

Applicant's arguments with respect to claims 9-11, 15-23 & 29-30 have been considered but are moot in view of the new ground(s) of rejection. Further, as figs. 1 or 4 disclosed in the reference, it has been considered as the incident light irradiating from only one surface such as surface A. Therefore, surface A would be considered as first side and surface B would be considered as second side (as in the invention claim). Moreover, when viewing the image from surface B (or second side), there is no incident light irradiating onto surface B.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on M-F/9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
Art Unit 2871
-- November 21, 2005 --

TN

ANDREW SCHECHTER
PRIMARY EXAMINER